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10/669,215	09/24/2003	Valerie Sue Adams	71553	4646

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EXAMINER

BUTTNER, DAVID J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 09/06/2006

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/669,215
Filing Date: September 24, 2003
Appellant(s): ADAMS ET AL.

MAILED

SEP 06 2006

GROUP 1700

Louis Moreno
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 8/14/06 appealing from the Office action mailed 10/12/05.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

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(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,922,816	Hamilton	7-1999
5,886,133	Hilbert	3-1999
5,254,610	Small	10-1993
5,106,944	Sublett	4-1992
4,786,692	Allen	11-1988

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Smith, W.A. "Chemistry of Miscible Polycarbonate-Copolyester Blends" Journal of Applied Polymer Science Vol 26 page 4233-4245 (1981).

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-4, 7-10, 12, 15-20, 31-37, 39, 40 and 42 rejected under 35

U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the Sublett '944 Patent.

Sublett suggests blends of polycarbonate with polyester (column 2, lines 4-6; table 1). The polyester is based on dimethyl terephthalate (ie a diester of a dicarboxylic acid which provides the terephthalic acid repeat units), cyclohexane dimethanol and optionally ethylene glycol (column 2, lines 11-15). The catalyst for making the polyester is present in amounts to provide 10-100 ppm titanium (column 2, line 20). Any amount within this range is at least prima facie obvious if not considered anticipatory.

A phosphate may also be present in the catalyst system (column 2, line 41, 56-58).

Claims 1-4, 7-10, 12, 15-20, 31-37, 39, 40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Sublett '944 Patent in view of Hamilton '816 or the Smith Article in Journal of Applied Polymer Science.

Sublett suggests a range of titanium amounts, but does not point out advantages in picking the lower end amounts.

Hamilton (column 1, lines 24-31; column 2, line 59) and Smith (synopsis, page 4237) explain residual titanium catalyst from the polyester negatively affects polyester/polycarbonate blends in terms of color and decreased viscosity (ie loss in molecular weight).

One of ordinary skill seeking to minimize these problems in Sublett's blend would choose the lesser amounts of catalyst when producing the polyester.

Claims 1-10, 12-20, 31-40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Sublett '944 Patent in view of Small '610 optionally in further view of Hamilton '816 or the Smith Article.

Sublett does not suggest adding distearyl pentaerythritol diphosphate to the PC/polyester blend.

This and other phosphates are known to improve the melt stability and splaying of PC/polyester blends (column 2, lines 23-26; column 4, line 5 of Small). It would have been obvious to add these phosphites to Sublett's blend for the expected improvements. Note that Small uses the same phosphite -Weston619 (table 3) as appellant (page 38 line 18 of appellant's spec) in the same amounts called for by appellant (table 5; page 18 line 17 of spec). The same ppm of elemental phosphorous must be provided by the reference.

Hamilton and Smith can be relied on to choose low amounts of titanium catalyst as previously explained.

Claims 1-13, 15-26, 28-37 and 39-42 rejected under 35 U.S.C. 103(a) as being unpatentable over the Allen '692 Patent in view of Hilbert '133.

Allen blends polycarbonate with polyester (abstract). The polyester can be based on cyclohexaned dimethanol, ethylene glycol and terephthalic acid (column 9, line 1-3) in the ratios preferred by applicant in claim 20. Alternatively, the polyester can be based on cyclohexane dimethanol, isophthalic acid and terephthalic acid (column 10, line 1-3) in the ratios preferred by applicant in claim 21. Various catalysts can be used (column 7, line 67) to polymerize the polyester including titanium compounds (col 8 line 4), but Allen does not describe the amount of titanium.

Hilbert discloses catalyst system for making polyesters having 1-10 parts of titanium (column 2, line 57). "Parts" means "ppm" (col 3 line 5). This system is said to maintain good color and clarity (col 2 line 39). Furthermore, Hilbert's catalyst system includes a combination of appellant's toners required by claim 11 (column 5, lines 31-40) and phosphorous (column 2, line 61).

It would have been obvious to use Hilbert's catalyst system when making the polyester of Allen's polyester/PC blend. This low-level titanium catalyst system would be expected to minimize the well-known problems associated with residual titanium in polyester/PC blends.

(10) Response to Argument

Appellant argues Sublett's titanium amounts (10-100ppm) merely overlap the claimed amounts (1-30ppm).

This is significant overlap. Twentytwo percent of the reference range meets appellant's claim. This is believed to constitute the sufficient specificity required by

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MPEP 2131.03 to apply the overlapping reference as anticipatory. Even if not anticipatory, the overlap of ranges requires a finding of prima facie obviousness (MPEP 2144.05; In re Malagari 182 USPQ 549). It would have been obvious to one of ordinary skill in the art to have selected any titanium amount within the broad range of Sublett including the overlapping 10-30ppm range.

Appellant argues he has provided unexpected lowered yellowing and melt stability for the narrower titanium range which overcomes any prima facie obviousness.

This is not convincing. Residual titanium catalyst was previously recognized as producing significant discoloration in polycarbonate/polyester blends (see page 4237 of the Smith article). It would stand to reason that minimizing the amount of residual titanium would lessen the discoloration. Of course utilizing as little titanium catalyst as possible to polymerize the polyester would minimize the amount of residual titanium present in the blend.

Similarly, the Smith article (page 4237) indicates additional titanium causes a decrease in specific viscosity (ie poor melt stability). Again, utilizing as little titanium catalyst as possible to polymerize the polyester would minimize the amount of residual titanium present in the blend and improve melt stability.

It appears appellant's advantages when using small amounts of titanium catalyst are the expected advantages rather than unexpected results. Expected beneficial results are evidence of obviousness (MPEP 716.02(c)).

Appellant's fails to compare the closest prior art (ie Sublett) required by MPEP 716.02(e). Sublett includes alkali(ne) metal in his titanium catalyst system. Blends using

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this catalyst system are said to not discolor (col 5 line 9-11,34,50 etc) and therefore must be considered closer than what appellant compares in his examples. Appellant's claims permit the presence of other catalysts to be present along with the titanium. It is not clear if Sublett's blend @ 30ppm titanium is any better than at 50ppm.

Appellant argues Hamilton and Smith suggest deactivating the titanium catalyst rather than minimizing the amounts thereof.

The rejection does rely on the inventive concept of Hamilton and Smith. These references were merely cited for their background discussions of the negative effects of residual titanium in polycarbonate/polyester blends. Because residual titanium has negative consequences for polycarbonate/polyester blends, one would use as little titanium as possible in making the polyester.

Appellant does not dispute the obviousness of adding Small's phosphite to Sublett's composition, but instead relies on the earlier arguments regarding Sublett.

Appellant argues Allen and Hilbert cannot be combined because Allen is directed to amorphous polyesters and Hilbert is directed to crystalline polyesters.

The examiner doesn't agree that Hilbert is limited to crystalline polyesters. The slow crystallization rate referred to by Hilbert (col 3 line 35) would include amorphous polyesters. Amorphous polyesters would have a slow or negligible crystallization rate. Even more importantly, Hilbert calls for the ethylene glycol to be at least 65% of all diols present (col 3 line 48). This would permit up to 35% cyclohexanedimethanol as a secondary diol (col3 line 62). Allen indicates his amorphous polyester has 25-75% ethyleneglycol and 75-25% cyclohexanedimethanol (col 7 line 49). Clearly, Hilbert's

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polyester containing 65-75% ethyleneglycol and 35-25% cyclohexanedimethanol must be amorphous. Note that Allen's examples (table 1) uses a polyester of 70% ethyleneglycol and 30% cyclohexanedimethanol.

Secondly, appellant gives no explanation why catalysts in making crystalline polyesters would be inapplicable when making amorphous polyesters. The same esterification and/or transesterification occurs regardless of whether the final product is amorphous or crystalline. This is consistent with appellant's own specification which indicates any polyester can be employed (page 12 line 18). Appellant apparently takes the inconsistent position that crystallinity/amorphousness makes no difference to his own claimed invention, but is of great importance when evaluating the Allen/Hilbert combination.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

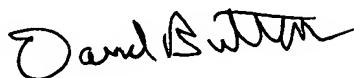
For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

David Buttner

DAVID J. BUTTNER
PRIMARY EXAMINER

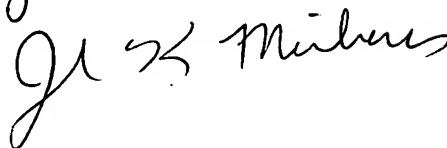
A handwritten signature in black ink that reads "David Buttner". The signature is written in a cursive style with a large, stylized "D" and "B".

Conferees:

Randy Gulakowski

A handwritten signature in black ink that reads "Randy Gulakowski". The signature is written in a cursive style with a large, stylized "R" and "G".

Jennifer Kolb-Michener

A handwritten signature in black ink that reads "Jennifer Kolb-Michener". The signature is written in a cursive style with a large, stylized "J" and "K".